FD-8000 USER MANUAL

Medical Device Directive
93/42/EEC

September 2013
Document 8200640 ver. 4
We reserve the right to make
changes without prior notice

FINNDENT

FINNDENT

Introduction..... 2
Warnings and Precautions..... 4
Warranty..... 4
Symbols and Abbreviations..... 5
Unit Main Parts..... 6
Using the Unit..... 8
- Switching the Unit On/Off..... 8
- Instrument Bridge..... 9
- Control Panel..... 10
- Instrument Use..... 13
  - Instrument Spray.....13
  - Chip Blow..... 14
  - Foot Pedal..... 15
  - Faro Alya Dental Light..... 15
  - Micromotor..... 17
  - Scaler..... 19
  - Turbine..... 20
  - Curling Light..... 21
  - Syringe..... 22
  - Suction System..... 22
- Amalgam Separator..... 23
- Water Line Rinsing..... 24

Unit Maintenance..... 25
- Regular maintenance schedule..... 25
- Micromotor..... 26
- Syringe..... 26
- Scaler..... 27
- Curing Light..... 28
- Instrument Bridge..... 28
- Suction System..... 29
- Amalgam Separator..... 30
- Technicial service checklist..... 31

Cleaning and Disinfecting..... 32
Spare Parts List..... 33
Approved Parts List..... 34
Dimensions..... 35
Fault Diagnostics Table..... 36
Technical Specification..... 37

Patient Chair Introduction..... 38
Patient Chair Warnings and Precautions..... 39
Patient Chair Parts..... 40
Switching the Chair On/Off..... 41
Type Plate..... 42
Chair Positioning..... 43
Patient Chair Maintenance..... 44
- Cleaning Upholstery..... 45

Chair Technical Specification..... 46

INTRODUCTION

About this manual

This user manual describes how to use and regularly maintain the Finndent 8000 dental units. The following Finndent 8000 dental units and chairs are included:

DENTAL UNITS

FD-8000B1

A floor-mounted dental unit that has its unit body on the floor above a connection box (including water, air, drain, suction and other possible connections) with a connected instrument arm. The instrument bridge, the support for instruments, is connected to one end of the instrument arm. The instrument tubing is run through low-friction doorio arms. There may be one or two control panels on the side of the instrument bridge to control the instruments and the chair.

The dental light is connected to the unit body with an additional light column. An optional monitor arm is available for this column.

The following cuspidors are available for connection to the unit body:

ÅCuspidor Compact with a glass bowl and telescopic suction arm;
ÅCompact telescopic suction arm without bowl;
ÅCuspidor Export with a ceramic bowl and assistant suction arm with control panel;
ÅCuspidor Export with a ceramic bowl and telescopic suction arm.

FD-8000B2

This unit differs from the FD-8000B1 unit in that the instrument tubes hang from the bridge. An instrument is activated when it is lifted from the holder.

FD-8000P1

This unit is the so-called ceiling unit. The unit instrument bridge is exactly the same as the FD-8000B1 unit. The instrument arm is fitted to a vertical arm connected to the ceiling. Control units (electronic plates, transformer etc.) for the dental unit are installed between the concrete ceiling and the suspended ceiling of the clinic room. And installation box of white painted sheet metal is also available.

The dental light and optional monitor arm are connected to an adapter on the vertical arm. A bottle for water line disinfection is also attached to this adapter.

A cuspidor is not available with this model and the suction system is installed into cabinet.

Intended use according to directives

According to EU Medical Directive MDD 93/42/EEC, this dental unit is a Class IIa medical device. A Class IIa medical device is any transient used invasive device which in part, penetrates inside the body through a body orifice (active therapeutic device, MDD annex IX, intended to transmit energy to human body).

The **FINNDENT 8000** dental unit and chair are intended for use by dentistry professionals to give dental treatment. It is prohibited to use this dental unit and chair for any other purpose. The intended purpose includes the instructions for use and maintenance included in this manual (IEC 60601-1, 7.9.2). **This dental unit and chair may only be used by trained dental personnel to give dental treatment in a dental clinic setting. FINNDENT is not responsible for any other uses of the unit and chair.**

Prohibited use of device

When this device is equipped with a telescopic arm, there is a circle magnet attached to the suction connector. It is used to give a stop signal to the suction motor when the suction tube is resting on the holder.

In the case of patient with a pacemaker, please remember that a circle magnet may disturb pacemaker function (IEC 60601-1, 7.9.2).

PATIENT CHAIRS

Finndent patient chairs differ as follows:

FD-3600
This chair is built on a zinc-galvanized steel base and is covered with powder-coated plastic parts. The chair has fixed armrests.

FD-5000
This chair is built on a zinc-galvanized steel body with a molded and wet-painted aluminum backrest and seat. The seat has a 25% rotation that makes it easier for patients to be seated and leave the chair.

This chair may be delivered with fixed armrests or with movable armrests. When delivered without armrests, there is an option to have a broader backrest.

Associated Documents

The manufacturer’s user manual for the amalgam separating system is included with delivery of this dental unit.

Instruments delivered with this dental unit are also supplied with the manufacturer's instructions for use and maintenance.

Warnings and Precautions

Do not use the unit and chair where there is a risk of causing a fire or explosion; e.g., in the presence of flammable liquids, gasses or dust.

Do not let children or unauthorized people play with or use the chair, unit or any of the instruments.

Use only the instruments and accessories listed in this manual.

For the dental chair and unit to function efficiently, they must be regularly serviced to avoid breaks in usage.

Only Finndent service personnel or service personnel authorized by Finndent are allowed to carry out repairs and annual maintenance.

This unit and its accessories may not be modified, altered or re-manufactured in any way.

If the unit is used in an area where the water quality is poor, the following problems may arise:

- ÅPremature clogging of unit filters.
- ÅRapid clogging of the small diameter water hoses and instrument conduits.

We recommend that the unit be fitted with a CUNO CT-101 A filter unit with a filtration ratio of 5 µm.

A shut-off valve must be mounted on each unit. **Always close the water supply at the end of the day.**

The compressed air being used with the unit must be dry, oil-free and hygienically clean. The air compressor must be fitted with an air dryer and/or condensation valve. (Ask your dealer for more information).

The device can interfere with other devices due to its EMC characteristics. The device can be affected by other devices due to its EMC characteristics. This device can be affected by mobile telephones. For that reason, do not use mobile telephones when using the device.

Dispose of resulting waste materials in an environmentally friendly manner.

When the chair and unit reach the end of their service life, return them to your dealer for disposal.

Warranty

The manufacturer gives two (2) years warranty for the unit and the chair. Warranty validation requires that the Warranty document is filled with the installation details and returned to the manufacturer within two (2) weeks of the date of installation.

The warranty period for the installed instruments (Micro motor, turbine multiflex, curing light, syringe, scaler) is that given by the manufacturer, usually one (1) year. The unit consumables such as the instrument pad, instrument tubes, doorio arms, membranes, valves, suction connectors, etc., have a warranty period of one (1) year.

The warranty includes only replacement of the faulty item. The costs of dispatch, freight and installation or repair labor are not included in the warranty.

Complete warranty conditions have been delivered with the unit to the Customer and Distributor.

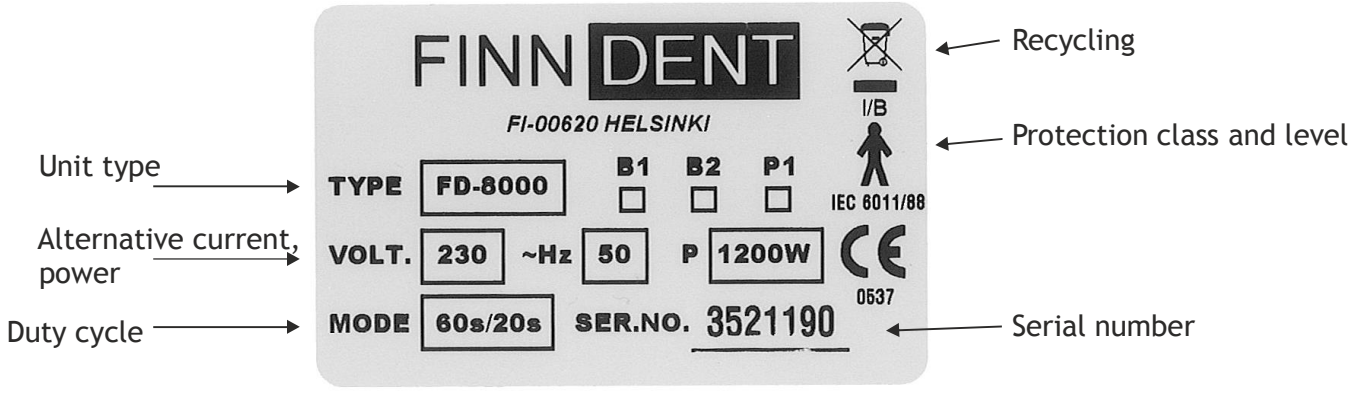
Symbols and abbreviations

V	Voltage
A	Ampere
AT	Amperes, slow blow fuse
W	Watt
Hz	Hertz
~	Alternative current
FI	Approved by Fimko
	Symbol for protection class B
CE 0537	European Community approval mark
RPM	Revolutions per minute
	IMPORTANT, read carefully before using the unit

Symbols for the control panel are described on separate paragraphs.

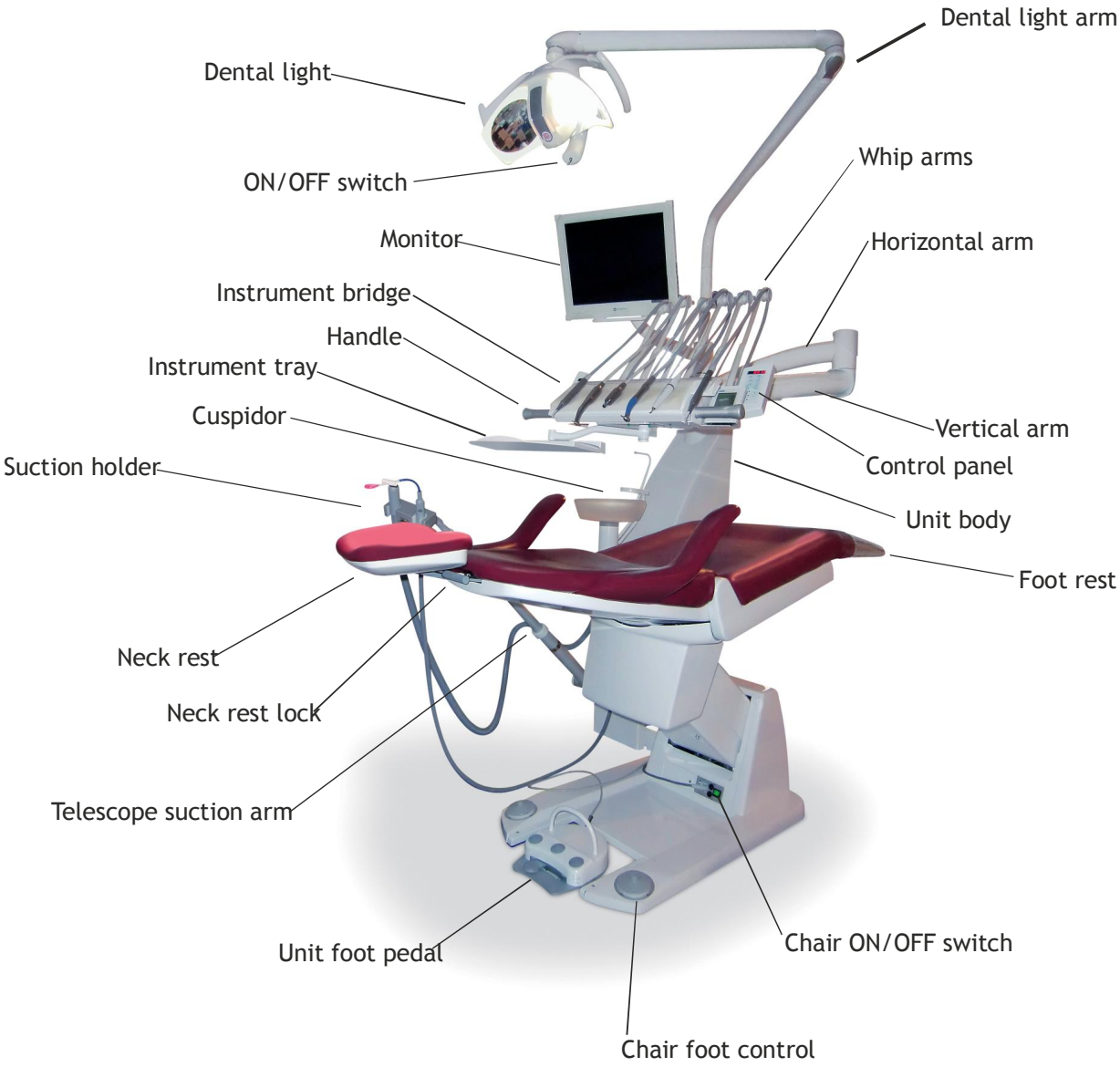
Labels

The unit label is situated near the main power ON/OFF switch. The chair label is located under the footrest.

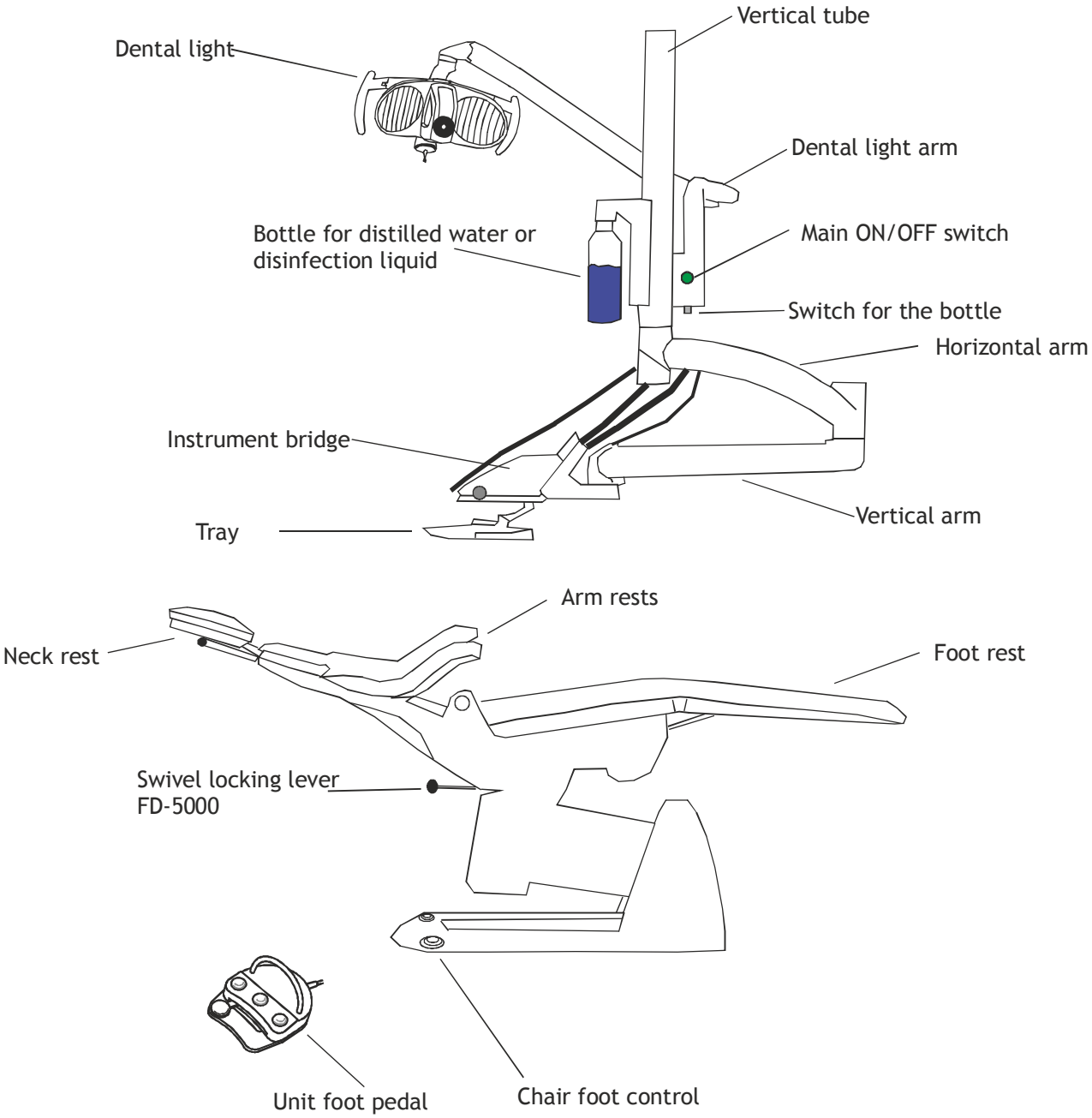


P 1200W = Unit 500W + Chair 700W

The main parts of the FD-8000B1

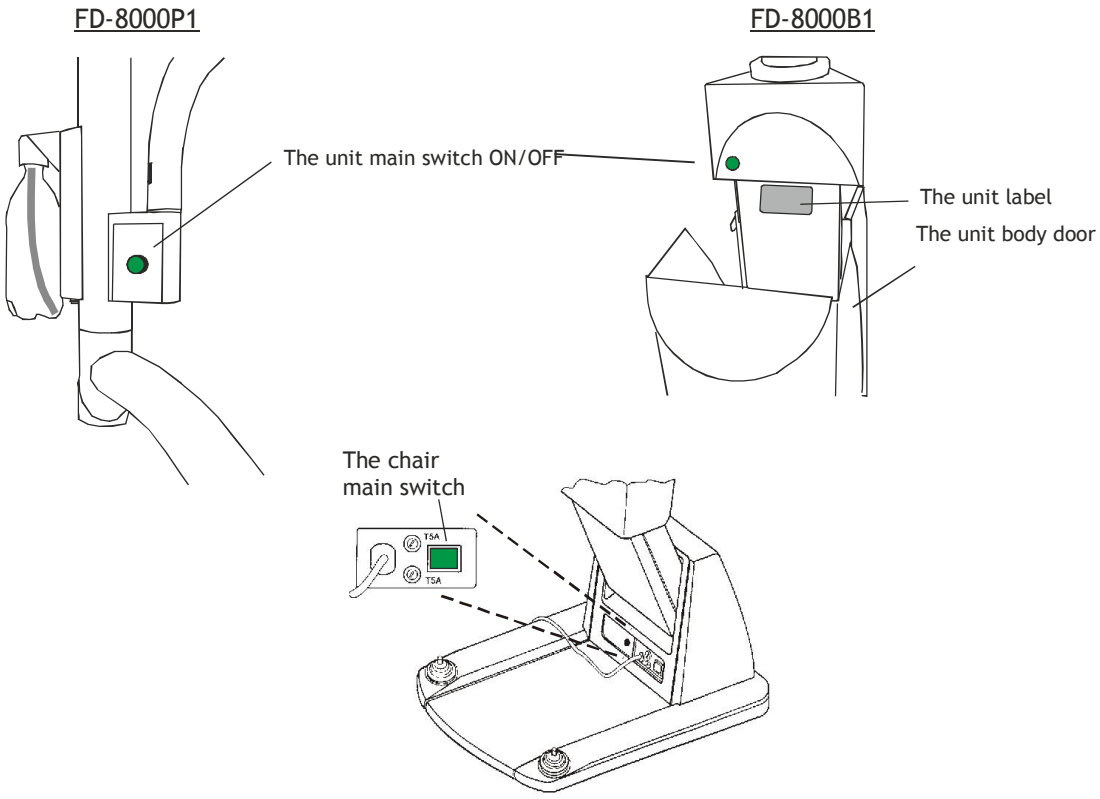


The main parts of the FD-8000P1



Switching the unit and chair on

Press the chair ON/OFF switch on the base of the chair to turn the chair ON. Then press the unit ON/OFF button (near the top of the unit) so that the unit is ON. When the green lights are on, the unit and chair are switched on.



The unit and chair will carry out a brief self-test, during which the software version of the unit is shown for a short time. Hereafter the time will appear on the control panel display. The chair and unit are now ready to use.

If ”Next Service Scheduled” is displayed at the start, the unit will give a signal and show the month and year for the next service. This date was scheduled at the last annual service by the technician and it means that it is time to make an appointment for annual service. The unit itself will continue to work normally.

Switching the unit and chair off

If the chair is connected to the power supply via the unit, you only need to switch the unit off. The chair will be automatically switched off. If the chair and unit are connected to separate power supplies, switch the chair off and then the unit.

ALWAYS switch the unit OFF at the end of each work day and before the weekend or holidays.

Positioning the instrument bridge

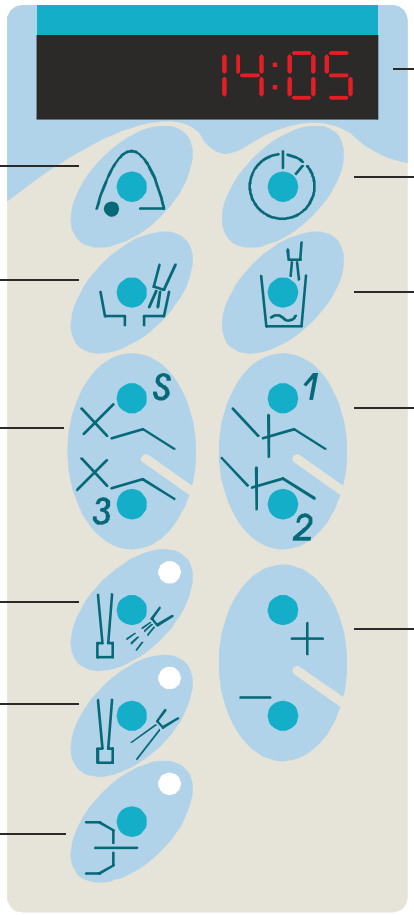
When the unit is in use, the instrument bridge is automatically locked in the required vertical position. To change the position, squeeze and hold either of the side handles of the instrument bridge to release the pneumatic brake. Adjust the height of the instrument bridge and then release the handle to lock the brake.

After each patient, the instrument bridge can be moved over to the assistant's side for instrument replacement, cleaning of the bridge and rinsing of the water lines. Be careful not to hit the cuspidor rinse tube when moving the bridge.

The aluminium side handles can be slid off and cleaned. These are autoclaveable.

Note that the maximum extra load that can be placed on the instrument bridge or the instrument tray is 1 kg (not including the weight of the instruments).

The Control Panel



Display

Door opening

Clock / timer

Bowl rinsing

Glass filling

Back rest positioning
S = last position (short press)
S = up (long press)
3 = down

Chair height positioning
1 = up
2 = down

Spray - air

Adjust clock and timer
Adjust Nsk Nano torque

Spray - water

CHAIR BUTTONS

Push briefly
Preprogrammed positions

Chip blow

Push and hold
Manual positioning

The instrument must be activated

Green light
Spray or chip blow is active

TIMERS

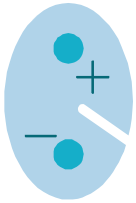
There are three timers that can be used during the treatment. These are available for adjustment only when instruments are not in use (inactive).

Selecting the timer

Repeatedly press the clock key until the timer you require appears on the display. The selected time will start to run immediately once you have selected the timer.

The time remaining is shown on the control panel even when an instrument is active. When the time has elapsed, the control panel display resets to normal mode.

Resetting a timer



Select the timer you wish to reset. Press and hold down the clock key until the timer seconds start to flash. Adjust the seconds with the +/- key.

Briefly press the clock key again and the timer hours will start to flash. Adjust the hours with the +/- key. To exit the timer adjustment mode, press the clock key again.

Setting the Nsk NLX plus micromotor torque

When in the low speed range (100 – 5000 rpm) it is possible to set the micromotor torque between 0.4 – 4.8N/cm. Ensure that the micromotor is set on low speed (use the B switch on pedal to change). Press and hold down the + key on the control panel when the micromotor is active, then press and hold down the A switch on pedal. You will see torque moment on the display.

Now you can adjust torque with the +/- key to value required. When the required value is reached, release the A switch on pedal. The required value has been stored in the memory.

DOOR OPEN / CALL ASSISTANT

The door opening / assistant call function has to be installed separately and it is used with the control panel key on the right.

CLOCK

The time is visible on displays when none of the instruments are in use (active).

To adjust the time, press and hold down the clock key. The minutes will start to flash on the displays. Adjust the minutes with the + / - key.

When the minutes adjusted, briefly press the clock key again and the hours will start to flash on displays. Adjust the hours with the + / - key.

To exit the clock adjustment mode, press the clock key again.

BOWL RINSE / GLASS FILL

Starting and stopping the bowl rinse

Briefly press the bowl rinse key to start the bowl rinse. Rinsing will stop automatically after the preset (30 sec) rinse time has elapsed. If you wish to stop the bowl rinse before the preset time has elapsed, press the bowl rinse key again.

Setting the duration of the bowl rinse

Press and hold down the bowl rinse key. The bowl rinsing time, starting from one second, will appear on the display. When the rinsing time reaches the required time, release the key.

Starting, stopping and setting the glass fill

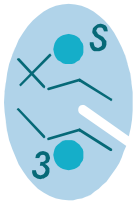
Operates in the same way as the bowl rinse.

USING CHAIR FROM THE CONTROL PANEL

Positioning the chair

To tilt the chair backrest or to manually adjust the seat height, press and hold down the corresponding control panel key.

To move the chair to a preprogrammed position, briefly press the corresponding control panel key. You can stop the movement at any time by pressing the key again briefly.



To adjust the backrest use the key on the left

Press and hold down the S key to manually raise the backrest. Briefly press the S key and the chair will return to its previous position.

Press and hold down the 3 key to manually lower the backrest. Briefly press the 3 key and the chair automatically moves to the preprogrammed position (see page 43 changing the preprogrammed chair positions).

To adjust the seat use key on the right

Press and hold down the 1 key to raise the seat manually. Briefly press the 1 key and the chair automatically moves to preprogrammed position (see page 43 changing the preprogrammed chair positions).

Press and hold down the 2 key to lower the seat. Briefly press the 2 key and the chair automatically moves to preprogrammed position (see page 43 changing the preprogrammed chair positions).

INSTRUMENT SPRAY

When an instrument is selected you can press the A switch on the pedal to toggle the spray ON / OFF. When the spray is ON you can separately turn the spray ON / OFF using the control panel key.

NOTE The spray setting is not stored in memory when it is adjusted from control panel.

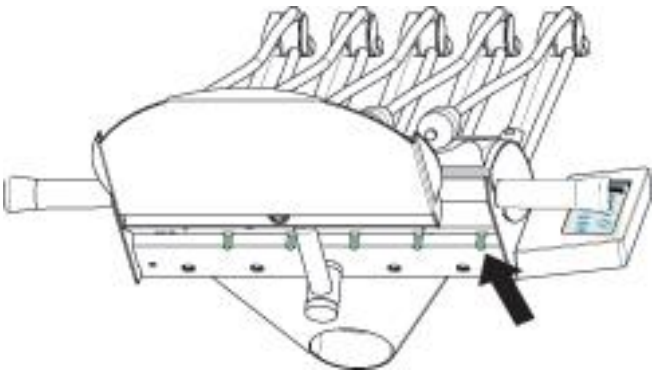
The lights on the water and air keys indicate whether the instrument spray is ON or OFF and whether air, water, or air and water are in use.

Water spray

The spray mode is set separately on each instrument. Some of instruments have no spray, some have both air and water spray, and some have only water spray.

Air spray

You can adjust the force of the spray with the screw at the bottom of the instrument bridge.



If the water spray does not work although it appears to be ON, check that the spray is not closed from water valve screw at the bottom of the instrument bridge.

If the spray is OFF or the force of the spray is very low, there is a significant risk of causing damage to the surrounding tissue.

CHIP BLOWER

Only the turbine and micromotor use chip blow.

Switching chip blow ON / OFF

Select the instrument and then briefly press the chip blow key to switch chip blow ON / OFF. When the light is on the chip blow is active. Chip blow cannot be switched on or off when the foot pedal is being used to operate the instrument.

Adjusting chip blow duration

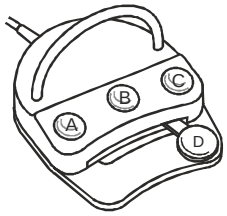
Select the instrument and press and hold down the chip blow key for at least two seconds. The chip blow duration, in seconds, will appear on the displays. Continue to hold down the key and the duration time will start to increase.

Release the key when it reaches the duration you require. This time is automatically saved as the new chip blow duration.

Chip blow duration cannot be adjusted when the foot pedal is being used to operate the instrument.

NOTE The chip blower is only available to turn ON when the instrument spray is also switched ON from foot pedal (see page 13).

FOOT PEDAL SHORTCUT KEYS (when an instrument is selected)



A **Spray ON / OFF**

B **Power range selection for the instrument**
Factory defaults can be changed by a service technician.

C **Micromotor reverse / forward**
When the micromotor is running in the reverse direction the rotation speed on the display will flash and the unit will give an audible beep.

C **Nsk NLX plus micromotor has the following additional functions in connection with ENDO use:**

Autoreverse = micromotor starts forward and when the torque upper limit is reached (bur sticks), the micromotor reverses.
On display A = Autoreverse

AutoreverseForward = micromotor starts forward and when the torque upper limit is reached (bur sticks), the micromotor briefly reverses and then automatically returns to forward.
On display F = Autoreverse Forward

Press switch C on pedal to change function.

D **Press the pedal to start the selected instrument**
To decrease the power level, slide the D pedal to the left. To increase the power level, slide the D pedal to the right. The last power level or speed will be stored in the unit's memory.

NOTE For more details on how to use instruments with the foot pedal and control panel, look at the USE OF INSTRUMENTS section. There is a description for each instrument.

USING AND ADJUSTING THE FARO ALYA DENTAL LIGHT

The Faro Dental light can be used with a joystick connected to the lamp or alternatively with the unit foot pedal. **An instrument may not be selected at the same time.**

Foot pedal use

To turn the light ON/OFF, press pedal D.
To halve light intensity, press switch A briefly.
To increase light intensity, press and hold down switch A.
To decrease light intensity, press and hold down switch C.

Joystick use (on lamp head)

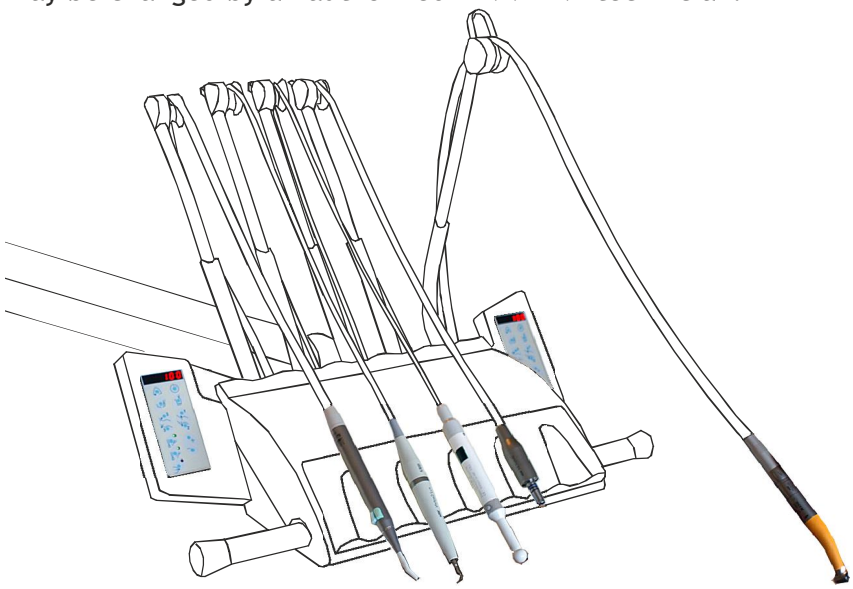
To turn the light ON, pull in direction A, towards you.
To halve light intensity, pull in direction A briefly.
To turn the light OFF, briefly push in direction B, away from you.
To increase light intensity, press and hold D to the right.
To decrease light intensity, press and hold C to the left.

INSTRUMENT SELECTION

To select an instrument, lift and pull it until the control panel display clock changes to the value that indicates the power or the working parameters for the chosen instrument. The syringe is always active, which means that you can use it at the same time as another instrument.

If you need a longer reach or constant use of instrument (e.g., during surgery), you can free the instrument tube from the whip arm and lift it slightly upward to select the instrument.

The instrument order may be changed by an authorized FINNDENT technician.



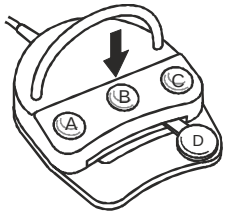
NOTE Remember to push the whip arm down into position when you are putting an instrument tube back on its holder.

If the control panel shows a power value (NOT time) even though no instrument is deliberately selected, check that the whip arms are pushed down to the end, onto the position holes. A control panel power value means that an instrument is selected.

MICROMOTOR USE (Nsk M40 LED or similar with brushes)

Selecting the start speed (rotation per minute = rpm)

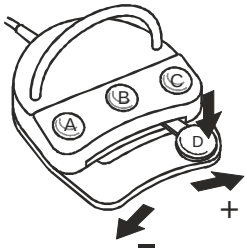
The micromotor has three different start speeds: 40,000, 20,000 and 10,000 rpm factory settings). The current start speed will appear on the display. To change to a different start speed press the foot pedal switch B.



NOTE Check from the control panel display that you are using the proper rotation speed and direction.

Starting, increasing and decreasing speed, stopping

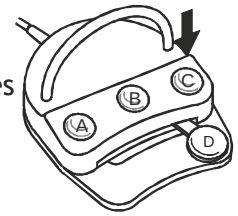
To start the micromotor, select it and then press and hold down pedal D.



The micromotor will start rotating at the selected starting speed. To increase the speed of the micromotor, slide the D pedal to the right with the pedal held down. To decrease the speed, slide the pedal to the left with the pedal held down. The speed can be adjusted by 200 rpm increments depending on the preset values. The factory default range is from 200 to 40,000 rpm.

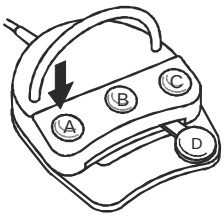
To stop the micromotor, lift your foot from the D pedal. When you stop and start the micromotor again with the same pedal position, the speed and rotation direction will be the same as before the stop.

Reverse rotation



While the micromotor is selected, press foot pedal switch C. When the micromotor is rotating reverse, the speed on the control panel display starts flashing and the unit gives an audible beep. To return to normal rotation, press foot pedal switch C again. The rotation speed on the display will stop flashing and the beeping will stop.

Instrument spray



Micromotor air and water spray is switched ON/OFF with the foot pedal A switch when the instrument is selected.

Spray modes are may be switched ON/OFF with the control panel keys for water and air spray.

Water spray

Air spray

NOTE Factory defaults can be modified on several parameters by Finndent service depending on the user's demands.

For example, programmable parameters include: rotation speed and range, the number of power ranges, use of last memory, default speed, use of spray and chip blow.

MICROMOTOR USE (Nsk NLX Plus, Nsk NLX nano, brushless)

Selecting speed (rotation per minute = rpm)

There are two fixed speed ranges for these micromotors:

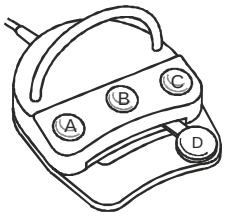
Low speed: 100 – 5,000 rpm
High speed: 1,000 – 40,000 rpm

You can switch the range by pressing the foot pedal B switch. Rotation speed is shown on the control panel display.

Micromotor start and stop, speed increasing and decreasing, reverse and spray are done the same way as described on the previous page (page 18).

ENDO USE

These micromotors have the following low speed ENDO functions:



Autoreverse = micromotor starts forward and when the torque upper limit is reached (bur sticks), the micromotor reverses.
On display A = Autoreverse

AutoreverseForward = micromotor starts forward and when the torque upper limit is reached (bur sticks), the micromotor briefly reverses and then automatically returns to forward.
On display F = Autoreverse Forward

Press switch C on the pedal to change function.

NOTE To change to required ENDO function, press foot pedal switch C when micromotor is selected. Function changes to next when you repeat pressing.

Setting torque

On the low speed range (100 – 5000 rpm) it is possible to set micromotor torque between 0.4 – 4.8N/cm. Press and hold down the + key on the control panel when the micromotor is active. Then press and hold down the A switch on pedal. You will see torque moment on the display.

Now you can adjust the torque with the +/- key to the value required. When the value required is reached, release the A switch on the pedal. The required value has been stored in the memory.

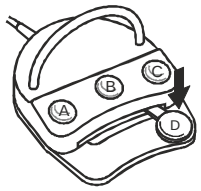
NOTE You can regulate the spray force of each individual instrument with the water valve screw (green) at the bottom of the instrument bridge (see page 13).

SCALER USE (Nsk Varios 150, Nsk Varios 170)

Selecting power level

The scaler has three preset relative power limits 30%, 70% and 100%. You can change the upper limit by pressing switch B on the foot pedal. The relative power level is shown on the control panel display.

NOTE The value depends on the position of pedal D at the time of selection.



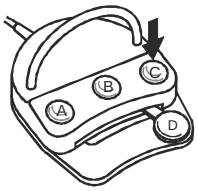
Power level setting, starting, stopping

The scaler starts when it is selected and you press and hold the D pedal.

The scaler will start at the selected power level. To increase the power of the scaler, slide D to the right with the pedal held down. To decrease the power, slide the pedal to the left. The power can be adjusted by 1% steps.

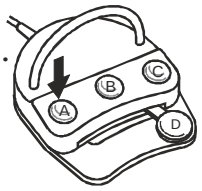
To stop the scaler, lift your foot from the D pedal. When you stop and start the scaler at the same D pedal position, the power value will be the same as before the stop.

Normal, Endo and Pero selection



With the scaler selected, press foot pedal switch C. On the control panel display the selected function will be indicated by a letter in front of the value.

Instrument spray



The scaler air spray is switched ON/OFF with switch A when the instrument is selected.

You can adjust the force of the water spray with the screw at the bottom of the instrument bridge (see page 13).

Every scaler tip requires a certain power level. Improper use may cause patient injury or break the instrument. Carefully read the manufacturer's instructions delivered with the unit.

A worn scaler tip decreases the power of the scaler. Use the supplied scaler tip card to measure the condition of the tip.

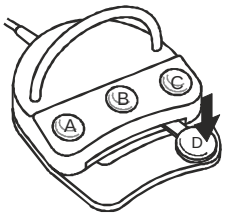
TURBINE USE

Starting power

Your authorized service technician will regulate the turbine air flow (power) with calibrated measuring tools during the annual inspections and on demand. This is the best way to ensure effective turbine performance.

NOTE The turbine multiflex connector and hand pieces have return air tubes that can easily become blocked due to insufficient cleaning. Follow the manufacturer's instructions how to keep these instruments clean.

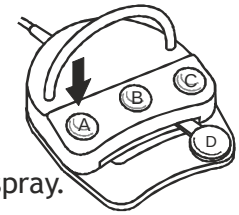
Starting and stopping



The turbine starts when it is selected (AIR is shown on the display) and the D pedal is pressed and held down.

To stop the turbine, lift your foot from the D pedal.

Instrument spray



The turbine air and water spray are switched ON/OFF with the foot pedal switch A when the instrument is selected.

Spray modes may be switched ON/OFF with the control panel keys for water and air spray.

Water spray

Air spray

NOTE You can regulate the spray force of each individual instrument with the water valve screw (green) at the bottom of the instrument bridge (see page 13).

CURING LIGHT USE

This dental unit provides proper current to the curing light. Every curing light has specific operation modes that are described in the manufacturer's instructions. Below is a summary of the Cure 24AC curing light usage.

Power level setting, starting, stopping

High output
- ÅSingle click either On/Off button to turn the curing light on.
- ÅAn audible single signal with a 2 sec interval will sound.
- ÅTurns OFF when the countdown timer reaches zero, or when ON/OFF is pressed when the light is in use.

Low output
- ÅDouble click either On/Off button which sets curing light on
- ÅAn audible double signal with a 2 sec interval will sound.
- ÅTurns OFF when countdown timer reaches zero, or when ON/OFF is pressed when the light is in use.

Set Timer
- ÅHold both on/off buttons down at the same time.
- ÅThe digital timer will count down from 20, 16, 12, 10, 8, 6, 4, 2 and back to 20.
- ÅRelease the buttons when you reach desired time.
- Å"Set & forget" timer: the unit will hold the set time until it is changed by the operator.

CAUTION - This unit produces high output curing energy!

Do not look directly at the light emitted from this curing unit.
Do not place light directly on or towards unprotected gingiva or skin.
Do not use this device without protective eyewear for the operator, assistant and patient.
Adjust the curing technique in accordance with an increase in curing energy. For example:
- Ådecrease the curing time;
- Åincrease the composite thickness;
- Åincrease the distance between the tip of the curing light and the light cured materials.

Measure the curing light intensity level annually with a radiometer.

SYRINGE USE (Luzzani MiniMate 3-F, Luzzani MiniLight 6-F)

Power level, starting and stopping

The syringe has two buttons, one for water output and one for air output. For spray, press both buttons simultaneously.

The maximum air and water flow (power level) are preset at the factory. Fine adjustments are made using the pressing force on the buttons.

The syringe may be used simultaneously with another selected instrument.

NOTE If there is no water coming from the syringe, check that the dental office main valve for rinsing water is open.

If there is no air coming from the syringe, check that the air compressor is switched on and the dental office valve for air is open.

CHANGING O-RINGS

The micromotor, turbine and syringe all contain O-ring seals. Check the condition of these O-rings daily. Even a small amount of damage to the rubber seal can cause instrument leakage.

We recommend changing all of the instrument O-rings at the same time.

SUCTION ARMS

The following suction arms are available with the FD-8000B1 model:

Telescopic suction arm;
Dürr Comfort hose holder with FD-7000 suction arm;
FD-7000 hose holder 3- and 4-place (plastic or metal).

Suction arms are available on following locations:

Suction arm connected to dental unit at 15:00 or at 12:00 cabinet;
Suction arm connected to cuspidor at 15:00;
Suction arm with control panel for assistant connected to cuspidor;
Suction arm behind the patient chair.

HOW TO USE TELESCOPE ARM

The suction arm turns freely from the lower joint. The suction arm can be lengthened or shortened by pushing and pulling the arm in or out.

The arm sliding sensitivity can be adjusted from the white plastic rings. Stiffness is affected by the O-rings inside every plastic ring. For functionality it is essential that the O-ring is properly set and the plastic ring is thread on top of the aluminum tube correctly.

AMALGAM SEPARATOR (Metasys MST1 or Dürr CAS 1)

The dental unit models FD-8000B1 and FD-8000B2 have an amalgam separator placed inside the frame of the unit. The FD-8000P1 has an amalgam separator placed at 12:00 orientation in the cabinet.

The amalgam separator is used to separate and collect amalgam waste particles that are suctioned into the dental unit vacuum line. The amalgam separator has a recyclable collection container that must be replaced once or twice per year. The full container is closed using the green lid that is provided with the new container. The full container should be returned to a suitably authorized company (e.g., METASYS) for disposal.

When the container is 95% full, the amalgam separator gives an audible buzzer signal and a yellow light is illuminated on the amalgam separator control unit. You can continue working after you switch off the warning signal by pressing the reset button. Replace the container at the next possible moment to be sure that the suction system works properly.

To ensure fine and non-stop function of the amalgam separator, you must use enough rinsing water and regularly use a specially designed suction disinfectant.

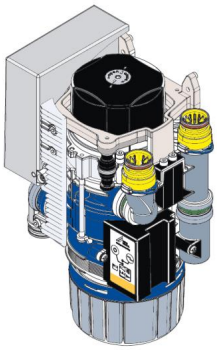
After every patient, use the high-power suction nozzle to suck approximately one glass of water through the suction system. The manufacturer also recommends the use of a suction disinfectant before long periods of disuse such as before lunch hour, after work and before holidays.

NOTE During surgery treatments blood is suctioned to the system. Blood coagulates easily, which can cause foaming and blockage. The generous use of water and manufacturer designed disinfectant reduces foaming and prevents blockage of the amalgam separator.

It is possible to install a separate rinsing unit beside the amalgam separator. This unit supports a small flow of water during the suction.

It is recommended to read the manufacturers user manual (delivered with the unit) before use. This manual has more detailed descriptions of maintenance procedures and troubleshooting.

Metasys MST1



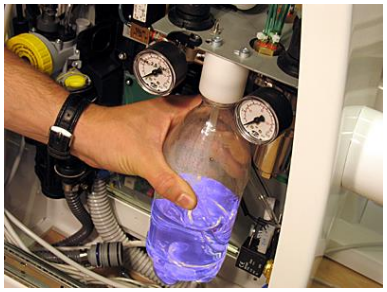
Dürr CAS 1

HOW TO RINSE INSTRUMENT WATER LINES

The dental unit is equipped with a water line rinsing system. Using the rinsing system in accordance with the instructions ensures that there is no bio-film formation to narrow water passages or prevent water valves from functioning. The use of the rinsing system is of high importance if the unit is connected to the municipal water line.

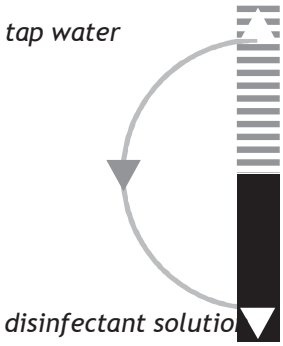
How to start and stop rinsing

1. Remove the bottle and fill it with the solution



2. Re-attach the bottle

3. Turn the black switch to switch to bottle input



4. When the arrow points down the disinfectant solution is selected

5. Close the cover

6.Select all instruments at the same time by pulling them toward you. Replace those that do not need rinsing.

7. Put the instruments on the rinsing holder without handpieces and tips

8. The display panel shows rinsing time. You can change time with the + button. The factory default is 30sec or 10min.

9. Press the button to start rinsing
TO STOP, PRESS THE BUTTON AGAIN

UNIT MAINTENANCE

After every patient

1. Use the high-power suction nozzle to suck one glass of water through the suction system.
2. Remove all stained instruments.
3. Wipe clean the instrument and suction hoses, suction nozzles, surfaces of the instrument bridge, the instrument tray, instrument support pad, lamp handles and the chair neck rest.
4. Replace or clean all instruments, the instrument support pad, suction hose holders and suction hose nozzles.
5. Rinse the instrument water line for 30sec.
6. Attach disinfected or sterile instruments.

At the end of the day

1. Remove the instrument shells and clean the threads.
2. Check the condition of O-rings.
3. Empty and clean the suction filter.
4. Empty and clean the cuspidor filter.
5. Clean and disinfect the cuspidor bowl.
6. Remove suction nozzles and disinfect the suction hoses.
7. Put the instruments on the rinsing holder.
8. Run the 10 minute water line rinsing.
9. Run a disinfectant solution through the suction system.
10. Wipe the dental chair upholstery.

Weekly or before a holiday

In addition to the end of the day routine:

1. Run a rinsing disinfectant through the instrument water lines (30sec or until the solution is running out of instruments).
2. Check and empty the turbine oil collector cup that is placed inside the unit frame (FD-8000B1 and FD-8000B2) or at the bottom end of the vertical arm (FD-8000P1).
3. Remove the turbine multiflex coupling and wipe the connector. Rotate the water regulator ring and check that the ring is correctly positioned.
4. Wipe the foot pedal and check the condition of cable.

NOTE It is suggested to place a ”RINSE FOR 40sec BEFORE USE” sign on the instrument tray when the disinfectant is suctioned to the water lines.

At the beginning of the week or upon return from holiday

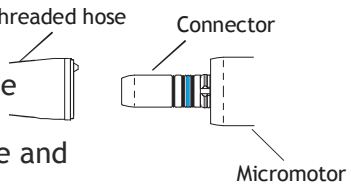
1. Do a 40 sec rinse of the instruments (see page 26).
2. Mount clean instrument sleeves and handpieces on to the instrument hoses on the instrument bridge.

At regular intervals

1. Change suction tubes, terminals and filters.

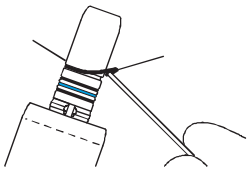
DENTAL UNIT SERVICE

Micromotor Nsk M40



The micromotor is threaded onto the instrument hose. To mount the handpiece to the micromotor, gently press and turn the handpiece on to micromotor connector until you hear it click. To remove the handpiece, grip the handpiece and micromotor and pull them apart.

Look at the figure to see how to change the micromotor O-rings. Always change all O-rings at the same time.

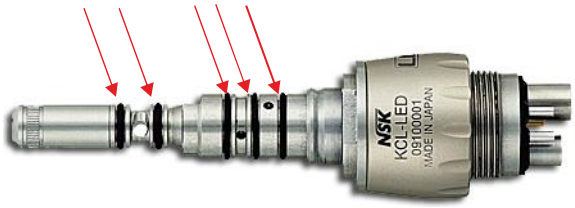


How to maintain the turbine multiflex coupling

The dental unit is equipped with the type of turbine multiflex coupling that was ordered. It is usually Nsk or Kavo compatible.

Open the water regulation valve completely (black marks at the same position) and press the pedal to make water to run through the multiflex. This is one way to clear away blockages.

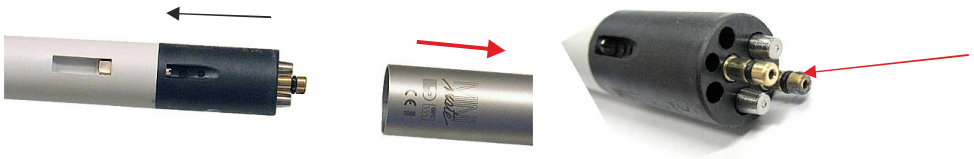
Check condition of the seals. O-rings must be in perfect condition so that the turbine works properly. Always change all of the O-rings at the same time.



Nsk Kavo multiflex coupling and O-ring locations

How to maintain the 3F syringe

Remove the syringe sleeve by pressing the button on the back end of the syringe and pulling the sleeve away at the same time.

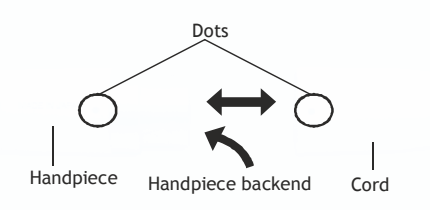


2 O-rings on the valve block

Change the O-rings on the valve block if the syringe is leaking water after use.

Scaler (Nsk 150, 170)

Mounting and removing the handpiece



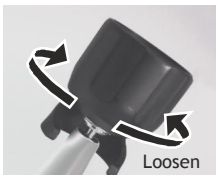
Align the dots on the handpiece and the handpiece cord.
Push the handpiece onto the connector.

To remove the handpiece, grip the handpiece and handpiece cord and pull to separate the handpiece and cord.

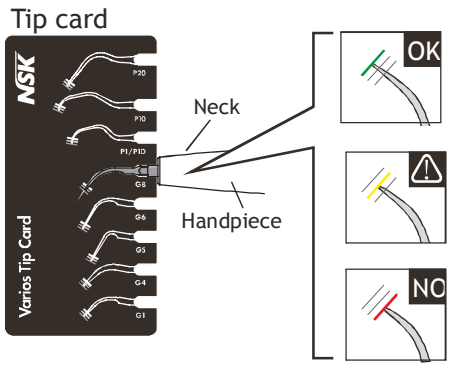
Mounting and removing tip

Change the tip after every patient. To avoid damage to the handpiece threads and to ensure correct vibration, follow the manufacturers instructions that were delivered with the scaler. Use the tip wrench to turn the tip clockwise until the wrench clicks. Do not turn the handpiece cord.

Tip wear



Check tip wear periodically with the tip card that was supplied with the scaler. Change the tip regularly to ensure effective use and to avoid damage which may be caused to patients teeth or gingival.



Green: No wear - Tip is OK
Tip replacement not necessary

Yellow: Wear of 1 mm - Tip is showing some wear
Tip replacement is recommended

Red: Wear of 2 mm - Tip is badly worn
Tip replacement is necessary

CLEANING THE FIBER OPTICS

Wipe the debris off the end of the optic fibers at the handpiece with an alcohol soaked cotton swab.

NOTE Do not use sharp pointed tools to clean the optic fiber end face.

Changing the o-ring

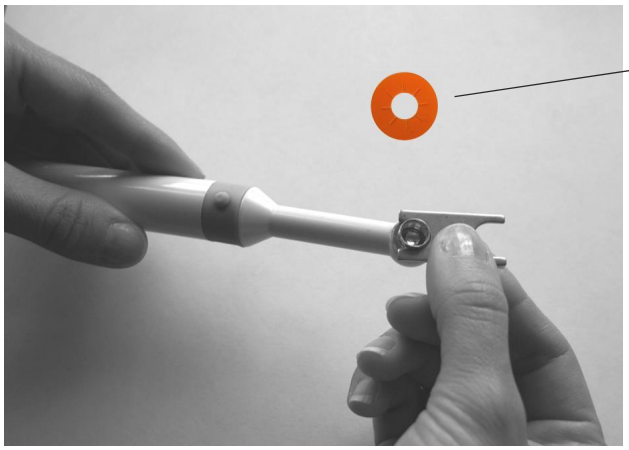
It is necessary to change the o-ring if the handpiece connector is leaking water.

For more detailed use of the scaler, please refer to the scaler user manual delivered with the unit.

Curing light (Cure 24 AC)

Adequate light intensity is essential for good performance of the curing light and secure polymerization of dental composites.

The curing intensity may decrease if there is debris on the curing light fiber optics or if composite material has stuck to the light. Wipe the lens of the fibre optics with an alcohol soaked swab. You can change the lens with the wrench supplied with the curing light.



How to maintain and vary the installation of the tray

It is possible to remove the tray from the bottom of the instrument bridge and wash it in the dish washer. The tray has 5 possible mount positions on the bottom of the instrument bridge.

The green knobs in the figure are spray water force regulation for each of the instruments.

Instrument bridge handles

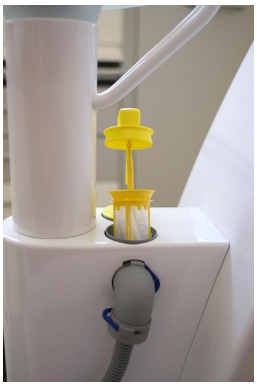
Pull the handle to remove it. Clean and sterilize them regularly.

The instrument pad may be washed in the dish washer.

Suction System

The suction system is the most prone to failure of all the dental unit systems. It is possible to avoid problems by using the suction system properly and by cleaning the system periodically.

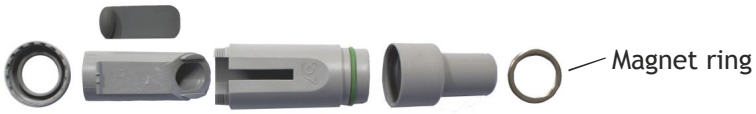
How to clean the coarse filter



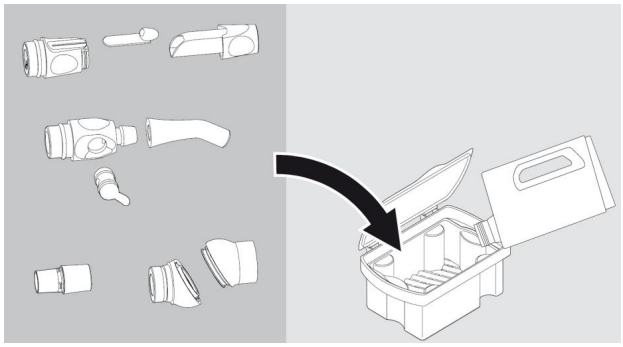
How to remove, disassemble and clean the suction nozzles

Suction nozzles are released by pulling them apart from the suction hoses. Those can be disassembled and autoclaved.

Cattani suction nozzle disassembled



Dürr suction nozzle disassembled

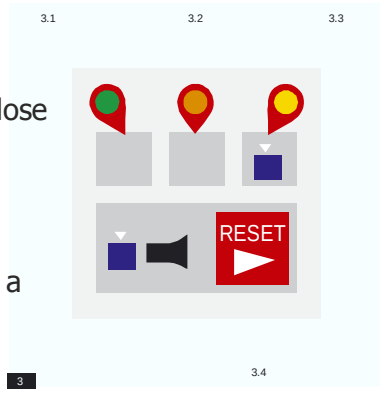


How to clean the turbine oil receiver cup

Metasys amalgam separator maintenance

Metasys Control Panel

The Metasys control panel is found inside the frame on the chair side or close to the amalgam separator if mounted elsewhere (e.g., in the cabinet).

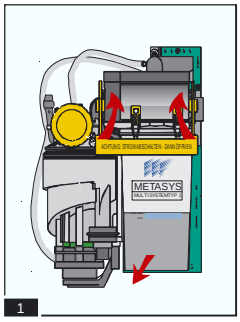


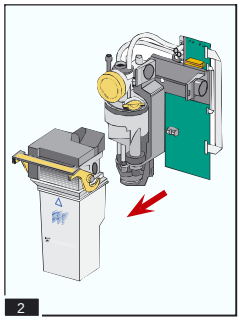
Indication LEDs:

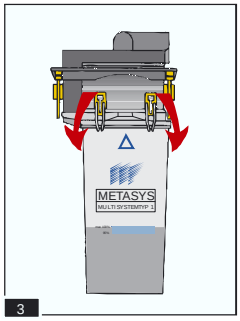
3.1. Green = Confirming unit is switched on.

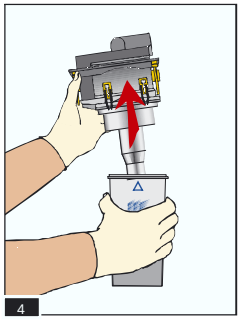
3.2. Red flashing = Centrifuge error! Switch the main button off and after a short break switch it on. Repeat a few times. If the error remains please contact your service technician.

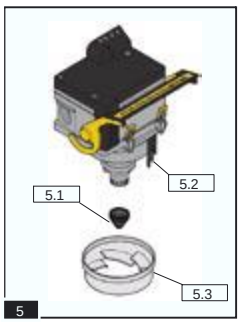
3.3. Yellow = Container full. A buzzer sounds, but can be switched off by pressing reset. This warning tells you that the collection container is 95% full and should be changed. It is possible to continue use until the container is 100% full.

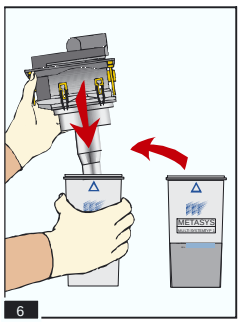


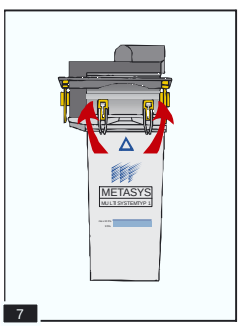


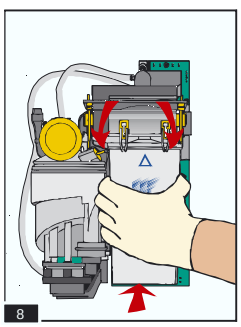












15. Changing the collection container:

⚠ *Switch off the main button of the unit !*
Wear protective gloves !

Prepare a new collection container and take out the enclosed disinfectant bag.

1 Turn the locking bracket upwards.

2 Remove Module 2 by pulling it forwards out of the unit and place it on a level, non-slip surface.

3 Open the four yellow clips on Module 2.

4 Holding the collection container firmly, pull off the top.

5 If the pump filter 5.1 is soiled, remove it over a drip tray, clean it and replace it onto the end of the suction end of the pump housing. The probes 5.2 in Module 2 can be cleaned with a soft cloth. The air brakes 5.3 can also be removed for careful cleaning. ,

⚠ *Use the positioning markings when reassembling the apparatus (arrow on the air brakes to the notch on Module 2).*

6 Place the cleaned and correctly assembled Module 2 onto a new collection container.

⚠ *Paying attention to the blue marking on the FRONT of the container.*

7 Close the four yellow clips on Module 2.

ⓘ *Clean the seal on the supporting element with a soft cloth and grease with vaseline.*

8 Carefully insert the amalgam separator into its support and close the locking bracket.

Switch on the main button.

The amalgam separator will start running for a short time following and then by the external visual display, will signal that it is ready for operation. (Signal 1, illuminated green).

These instructions are copied from the manual supplied with the amalgam separator.

MAINTENANCE SCHEDULE

Your authorized Finndent dealer will provide you with an annual service contract. During annual service, the unit will be checked and the following items must be looked at:

Dental unit check list:

Check the function of all instruments, including when necessary:
- Åreplace O-rings
- Åreplace water and air filters on inlets
- Åreplace pins and membranes on water and air pressure regulators
- Åcheck and adjust working and return pressure of the turbine
- Åcheck the power (intensity) of the curing light device
- Åcheck micromotor brushes and calibrate the speed of rotation

Check the function of the amalgam separator and/or cuspidor valve:
- Åclean and replace the amalgam container
- Åreplace the selection solenoid valve and membrane

Check the function of the suction system:
- Åreplace the suction tubing coarse filter
- Åreplace the selection valve membranes
- Åreplace suction hoses and handpieces

Other functions of the unit:
- Åoperation lights, bulb replacements, ventilator replacement
- Åsetting the reminder and date for the next service
- Åreplace the valves or the spindles on the water lines

The above maintenance may only be performed by a technician authorized by FINNDENT.

When ordering service, inform your dealer of all possible, even minor defects and any consumables needed (filters, bulbs, etc.).

During service visits it will be possible to make upgrades and modifications to the functioning of the dental unit. The technician should be asked to check the condition of the handpieces to prevent breaks in operation before the next planned visit. **Ask for more details from your dealer.**

WARRANTY

Please see page 3. For warranty claims, please first contact your dealer directly.

WATER LINES
BioFinndent 5L

BioFinndent is a ready-to-use liquid that ensures clean water lines and removal of the bacterial layer from the tube walls. Kills bacteria and fungus. Removes and prevents the formation of calc and alcas.

SUCTION SYSTEMS
Dentasept SA 5L

Cleaning and disinfection of suction systems. Suitable for different types of suction systems. Not foaming. Organic filth does not inactivate the strength of the product. 2% dilution.

Tested for: Bacterias: EN 1456, tuberculosis EN 14563.
Fungus EN: 13624 and EN 1456.
Virusidal: HIV, herpes, HB HCV and influenza.

SURFACES
Unisepta foam

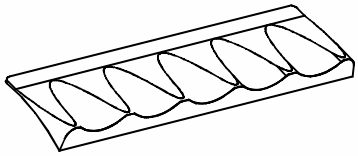
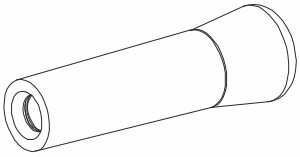
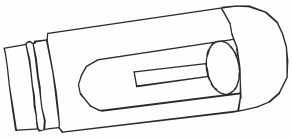
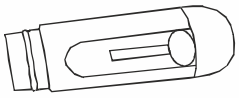
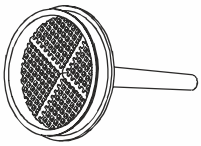
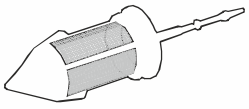
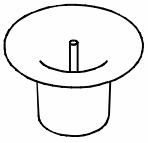
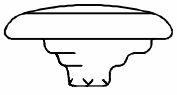
Efficient and safe ethanol based disinfectant for swabbing surfaces, tools and instruments. Excellent cleaning can be reached within 30 sec. Complies with requirements: EN 13727, EN 14561, EN 14348 and EN 13624.

Lint-free wipes are recommended, especially for cleaning handpieces and turbines.

UPHOLSTERIES
Dentasept SH

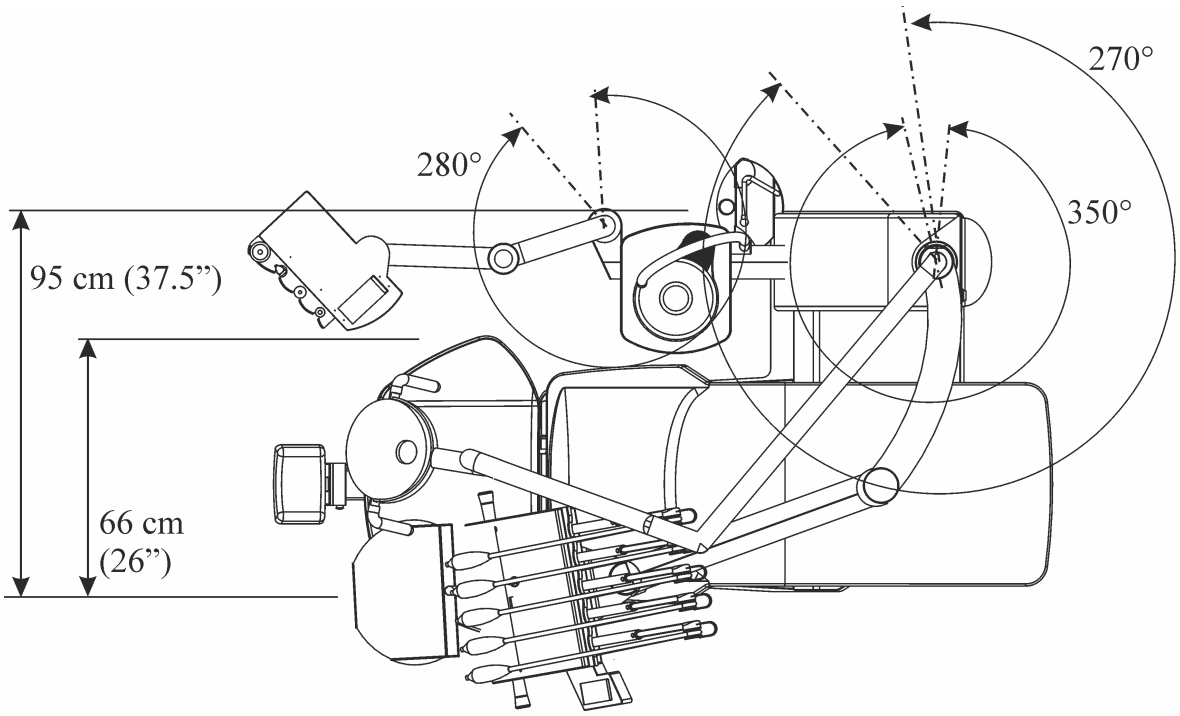
A liquid washing disinfectant, also available in ready-to-use wipes. Wipes are suitable for cleaning and disinfecting leather and imitation leather based dental stools and chairs.

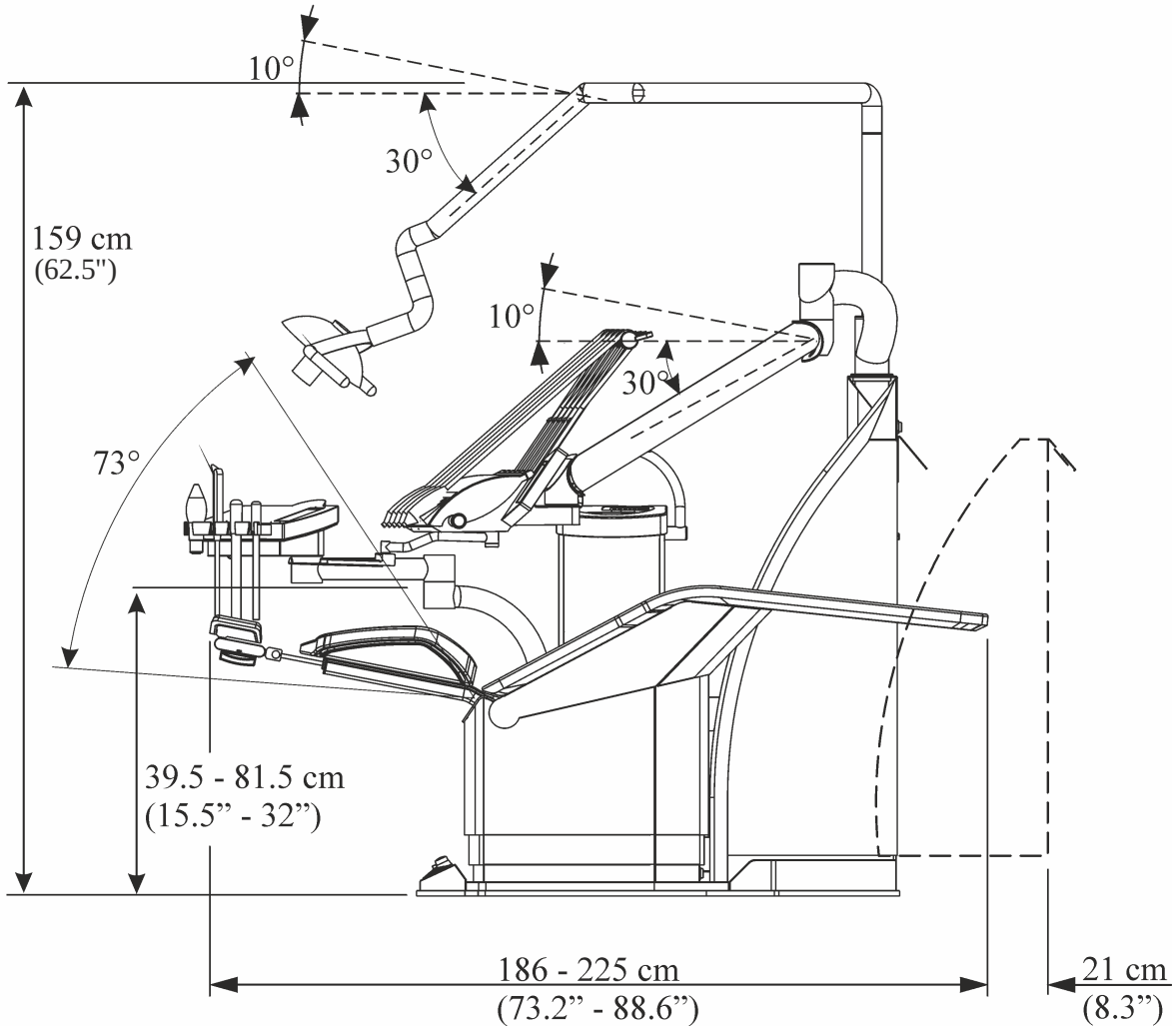
Tested for: EN 14561, EN 14563 and EN 14562.

PART	PART NO.	IMAGE
Instrument Support	6809960	
Handle	6203200	
High volume suction terminal	5500258	
Low volume suction terminal	5500259	
Coarse filter, Finndent	6808610	
Filter, Durr	5500311	
Cuspidor filter	6001015	
Ceramic filter cover	6701220	
Foot control rubber for patient chair	6805150	

APPROVED ACCESSORIES	
Electric Micromotors	Nsk TiMax,M40,Nano,NLX Kavo 200 Bien Air MC3 LK
Turbine Couplers	All Midwest compatible Nsk, Kavo, W&H, Bien Air
Scalers	Nsk 150, 170 Satelec Newtron, Suprasson EMS Piezon
Light Curing Devices	Cure 24AC Satelec MiniLed
Profylaxia	Nsk Prophy Mate
Syringes	Luzzani Minimate, Minilight Quint/Forest Faro
Amalgam Separators	Metasys MST1, ECO Dürr CAS Combi, Compact
Lights	Faro Alya, Maia

This list includes instruments that can be used with the FINNDENT dental unit. For proper use and maintenance please read carefully all the instructions supplied by the manufacturer of each instrument.


270°
280°
350°
95 cm (37.5”)
66 cm
(26”)


10°
30°
159 cm
(62.5")
10°
30°
73°
39.5 - 81.5 cm
(15.5” - 32”)
186 - 225 cm
(73.2” - 88.6”)
21 cm
(8.3”)

FAULT DIAGNOSTICS

Micromotor	Check	Fault
Does not run	Check that the motor is selected (rotation speed shown on the display)	Whip arm has risen up or selection lever has jammed (hanging hose).
	Check that the motor is attached properly to the hose.	
	Start the motor and rotate the hose at the end of the motor. If the motor stops working upon rotation, the tubing is defective.	Wires broken inside the tubing, call technician for service.
	Motor rotates, but there is no power or variation on high speed.	Brushed inside the micromotor are worn out.
Runs, but no water	Check the water supply.	Valve closed.
	Check the water from the syringe.	Main water valve (manual) is closed.
	Take the motor out of the tubing and try again.	If water is coming from the tubing, the coupling is stacked.
	If the spray only has air flow.	Water solenoid valve jammed, call for service.
No light	Check the socket with another bulb.	Bulb broken or wire in tubing broken.
Turbine	**Check**	**Fault**
Does not run	Check the selection on the display. The òAirò option should be shown.	Whip arm has risen up or selection lever has jammed (hanging hose).
Runs, but no water	Same check list as the micromotor.	If water is coming from tubing, the coupling is stacked.
Syringe	**Check**	**Fault**
No air	Check the compressor and the inlet pressure.	Compressor is not running.
No water	Check the inlet pressure.	Main water valve (manual) is closed.
Scaler	**Check**	**Fault**
Not vibrating	Check the selection on the display. The power level should be shown.	
	Check the handpiece connection to the hose.	
	Check the connection of the tip to the handpiece.	
Vibrates, but low power	Check the tip for wear and try with a new tip.	Worn tip, throw away and replace.
Works, but no water	Same checks as with the turbine and micromotor.	

Technical Specification for the Dental Unit	
Protection Class	I
Protection Grade	B
Protection Against Fluids	I PX0
Mode of Operation	Intermittent operation. Duty cycle for the unit is 60s/20s (use / not in use).
Operational Safety Grade	Standaard. The unit is not suitable for use in an environment with a mixture of inflammable anaesthesia, oxygen or laughing gas and air.
Operating Conditions Storage Conditions	Temperature: 15-40ºC Relative Humidity: 35-75% 0-50ºC 35-75%
Electrical Features	Supply: 230V / 50Hz Power consumption: 500W Main fuse (incl. chair): F3 / 6.3AT Main fuse (PCB): F4 / 2 AT
Water Connection	3-6 bar (particle size < 10µm)
Compressed Air	5.5-8 bar
Weight	FD-8000B1 / 65kg FD-8000B2 / 72kg FD-8000P1 / 40kg

Recommended distances between the dental unit and devices using radio frequencies for communication

Finndent units are made to be used in an electromagnetic environment where radiated disturbances are controlled. Users can prevent interference between the unit and radio frequency transmitters by keeping the minimum distance shown on the table below, depending on the power of the transmitter:

Trasmitter maximum nominal power W	150 kHz - 80 MHz $d=1,2\sqrt{P}$ distance in meters	150 kHz - 800 Mhz $d=1,2\sqrt{P}$ distance in meters	150 kHz - 2,5 Ghz $d=2,3\sqrt{P}$ distance in meters
0,01	0,1	0,1	0,2
0,1	0,4	0,4	0,7
1	1,2	1,2	2,3
10	4	4	7
100	12	12	23

The distance (d) in meters of the transmitters with power missing from the above table can be estimated using the equation for frequency range. P is the maximum nominal power (W) as provided by the manufacturer of the transmitter.

These instructions will not cover all possible cases. Absorbtion and reflection of the building may have an effect on the conductance of radio signals.

GENERAL

FINNDENT dental chairs have been designed and manufactured to the highest possible standards. If properly maintained and serviced they will serve you reliably and efficiently for many years.

FINNDENT endeavours to produce product documentation that is accurate and up to date. However, our policy of continual product development may result in changes to the product that are not immediately reflected in the product documentation.

FINNDENT maintains the right to make changes and alterations without prior notice.

FD-5000 patient chair

FD-3600 patient chair

This user manual describes how to use and care for your FINNDENT dental chair. Before using the dental chair, please read this user manual and all other related documents so that you know how to use the equipment.

Please keep this manual and any other documents in a safe place for future reference.

This chair is not suitable for use in an environment where there is an explosive atmosphere or where explosive agents are kept.

WARNINGS AND PRECAUTIONS

Do not sit on the backrest or leg rest when the chair in the horizontal position.

Do not sit on the armrests.

If you need to lift the leg rest, lift it from the bottom edge and not from the sides.

Intended use according to directives

The **FINNDENT 3600/5000** dental chair is intended for use by dentistry professionals to give dental treatment. It is prohibited to use this dental chair for any other purpose. The intended purpose includes the instructions for use and maintenance included in this manual. **This dental chair may only be used by trained dental personnel to give dental treatment in a dental clinic setting. FINNDENT is not responsible for any other uses of the chair.**

Warnings and Precautions

Do not use the chair where there is a risk of causing a fire or explosion; e.g., in the presence of flammable liquids, gasses or dust.

Do not let children or unauthorized people play with or use the chair.

Use only the instruments and accessories listed in this manual.

For the dental chair and unit to function efficiently, they must be regularly serviced to avoid breaks in usage.

Only Finndent service personnel or service personnel authorized by Finndent are allowed to carry out repairs and annual maintenance.

This chair and/or and its accessories may not be modified, altered or re-manufactured in any way or be used in a non-dental clinic application.

Dispose of resulting waste materials in an environmentally friendly manner.

When the chair and unit reach the end of their service life, return them to your dealer for disposal.

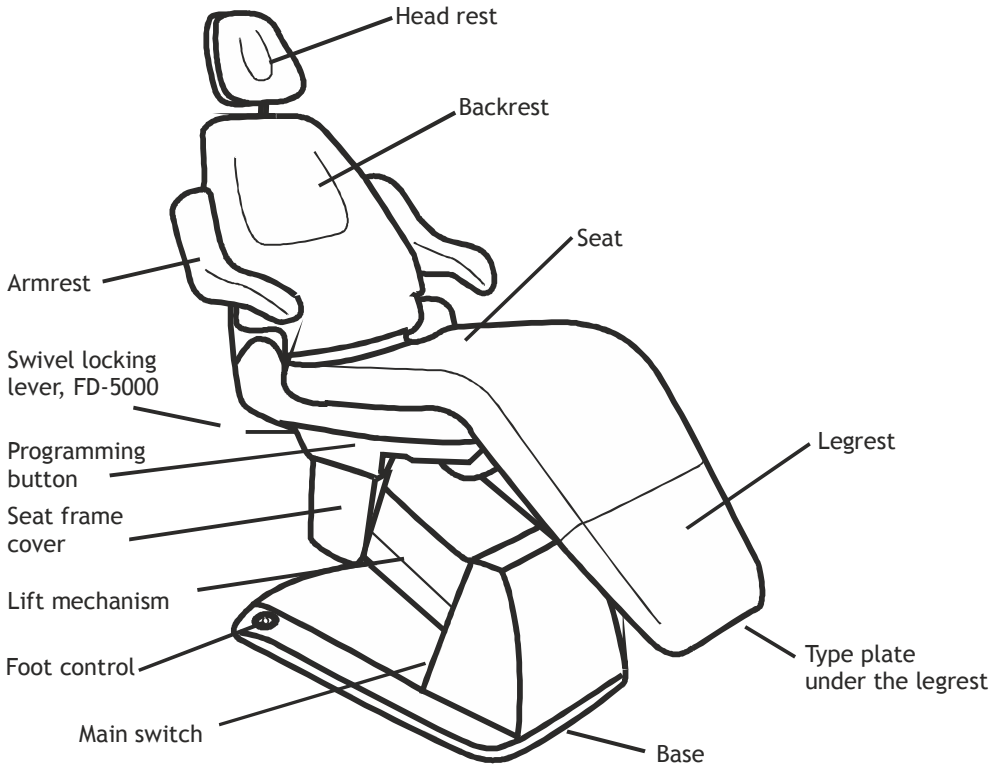
Warranty

The manufacturer gives two (2) years warranty for the dental chair. Warranty validation requires that the Warranty document is filled with the installation details and returned to the manufacturer within two (2) weeks of the date of installation.

The warranty includes only replacement of the faulty item. The costs of dispatch, freight and installation or repair labor are not included in the warranty.

Complete warranty conditions have been delivered with the unit to the Customer and Distributor.

THE MAIN CHAIR PARTS

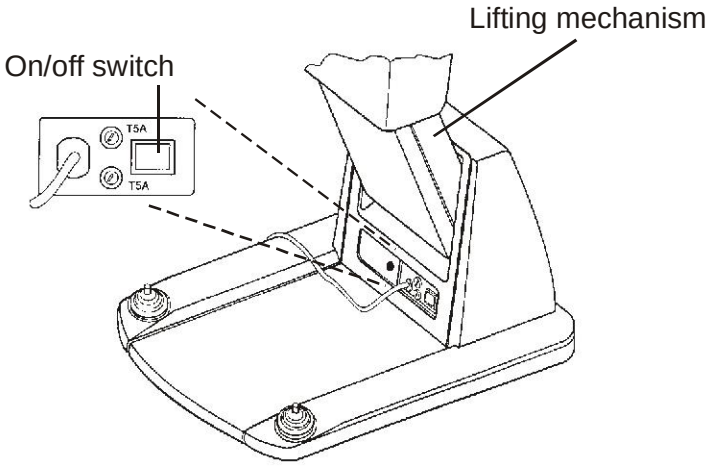


Note that the chair can be operated either automatically or manually.

Switching the chair on and off

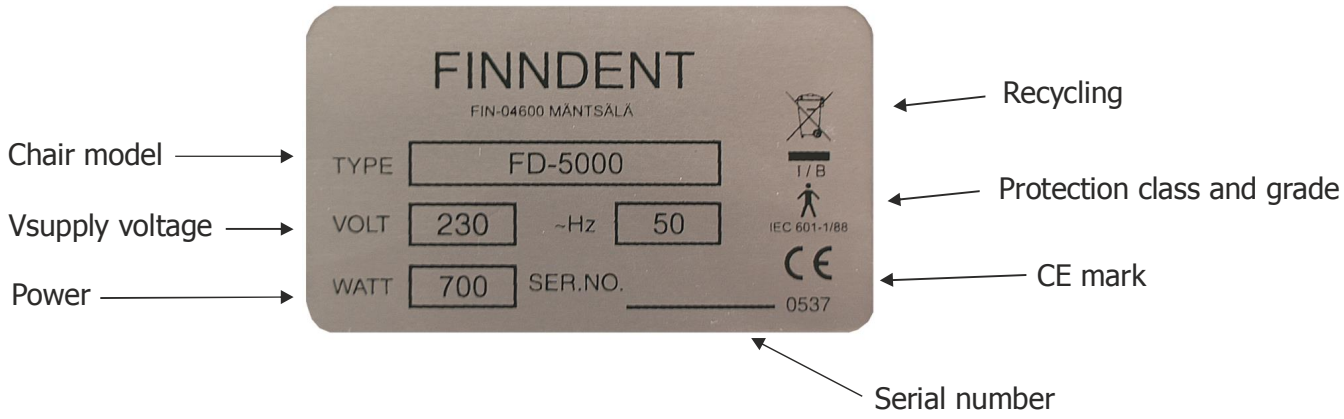
The chair is switched on and off with the on/off switch that is located on the base of the chair below the lifting mechanism. When the chair is switched on the switch will light up, indicating that the chair is ready to use.

The chair is switched off with the same switch. Switch the chair off when it is not being used.



TYPE PLATE

The type plate is located on the underside of the leg rest. The type plate includes the serial number of the chair and its electrical specifications. Please quote the serial number when ordering spare parts or discussing guarantee or service matters with your dealer or the manufacturer of the chair.



EMERGENCY AND SAFETY STOPS

Chair movement can be stopped during automatic mode in the following ways:

- ÅPush one of the foot controls in any direction;
- ÅPush the seat frame cover up;
- ÅIf connected to the unit, the limit switch on the suction arm will prevent movement up when activated.

The chair will start again when the foot control is used.

The chair will automatically stop if anything becomes trapped between the seat frame cover and the base of the chair.

Both the backrest and the leg rest can be manually lifted up if anything becomes trapped beneath them.

Using the preprogrammed positions

The chair height and backrest angle can be adjusted using two parallel connected foot controls, one on the dentist's side and one on the assistant's side. The foot controls have two functions: a short push for automatic movement to the preprogrammed position and a long push for individual, manual movement in each direction.

Using automatic movement, briefly push either foot control in the direction in which the preprogrammed chair position you require is stored. The chair will automatically move to the preprogrammed position. The S position will move the chair to the exit/cuspidor position.

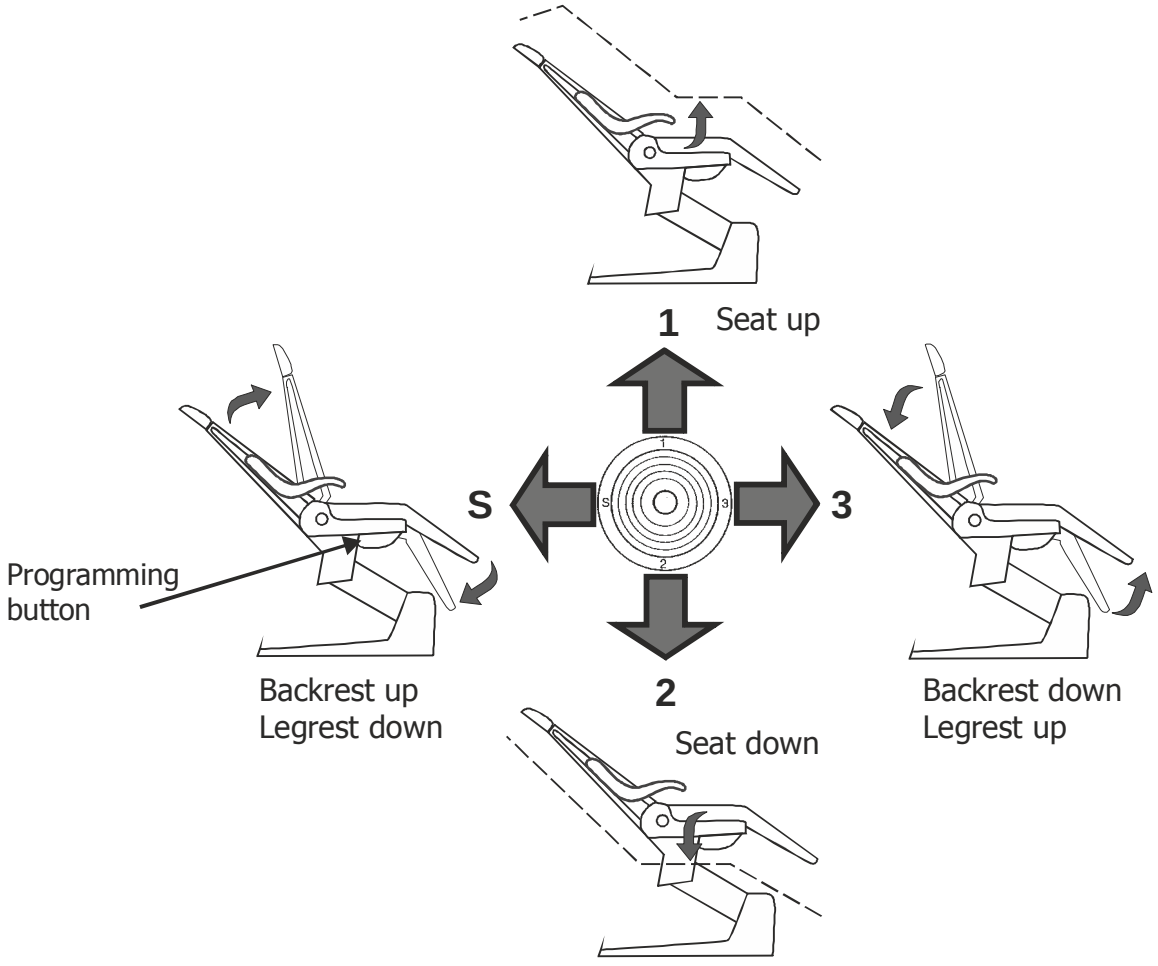
NOTE If the chair is in the exit/cuspidor position and you push the foot control in the S direction a second time, the chair will automatically return to its previous position.

If you wish to stop the chair before it reaches the preprogrammed position, either:

- Push one of the foot controls in any direction.
- Push the seat frame cover up.

Changing the preprogrammed chair positions

Manually move the chair to the position required using either of the foot controls. Do this by pushing the foot control in the direction that activates the appropriate chair movement and holding it there until the chair is in the required position.



Press the programming button on the control panel briefly and you will hear an audible signal that indicates you are in the programming mode.

Push either foot control to the position (1, 2, 3 or S) where you wish the new automatic chair position to be stored. You will hear a tone which indicates that the new position has been stored in the memory.

Note that you have ten (10) seconds in which to store the new chair position in the memory. If you do not push the foot control to select a storage position within this time the programming mode will be automatically exited.

NOTE If you do not want store the position, press button again to return normal state.

Repeat the above procedure for any other automatic chair positions you wish to reprogram.

Factory settings can be reset by pressing any button continuously for 5 seconds until the indication signal can be heard.

Moving the chair manually

The foot controls can be pushed in four directions, each of which will activate one of the chair movements.

To manually drive the chair to the position required push either foot control in the direction that will activate the appropriate chair movement. Hold the foot control in this position until the chair reaches the required position and then release the foot control.

- To move the seat up, push the foot control towards the chair and hold it there.
- To move the seat down, push the foot control away from the chair and hold it there.
- To raise the back rest and lower the leg rest, push the foot control to the left and hold it there.
- To lower the back rest and raise the leg rest, push the foot control to the right and hold it there.

Limit switches

The chair is fitted with limit switches that automatically stop the chair when the movement limits are reached. If you are manually moving the chair and you suddenly hear a signal and the chair stops moving, it means that the movement limit has been reached. To re-start the chair, move the chair in the opposite direction.

Seat swivel

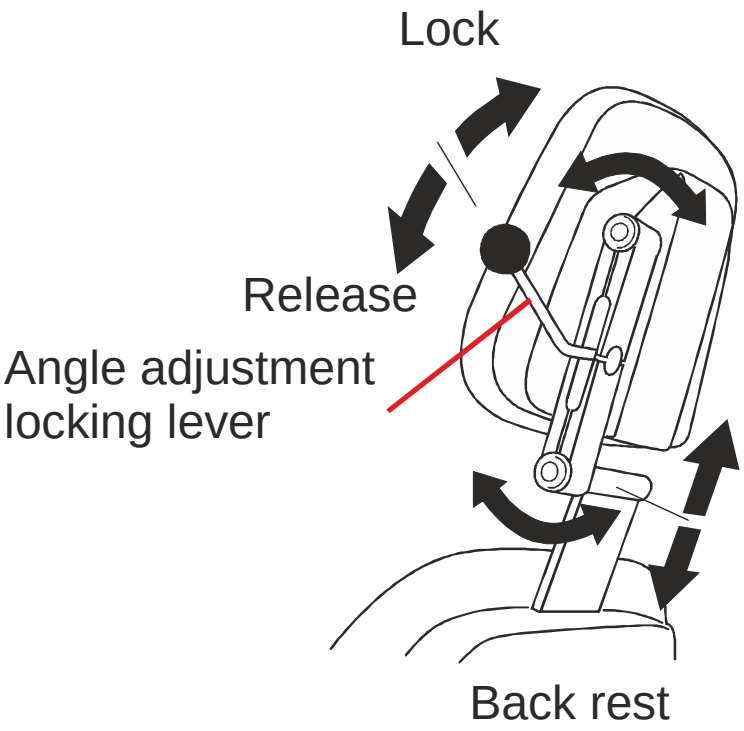
The chair can be swiveled 25° to the right or left. Push the seat locking lever to the left to unlock the swivel mechanism. Push the lever to the right to lock the swivel mechanism after you have set the chair to the angle you require.

Positioning the headrest

The height of the headrest can be adjusted by manually sliding it in or out of the backrest.

To adjust the angle of the headrest, release the locking lever (push it towards the back rest), set the headrest to the required angle and then retighten the lever (push it away from the back rest).

Make sure the locking lever is tightened securely. If it is not, the headrest may move when exerting pressure on a patient during treatment.



Trouble-Shooting

If the chair suddenly stops operating, switch the power off, wait a few seconds and then switch it on again. Check if the chair works. If it still does not operate, check the following before calling a service technician:

Check that the chair is connected to the power supply. If the chair has been disconnected from the power supply, reconnect it.

Check that the main switch is in the ON-position and that the switch light is on. If the switch is in the ON-position, but the switch light is off, the main fuse (or fuses) has blown, the power supply has failed or the switch light has blown.

NOTE If the chair is used frequently, the chair motors may overheat and trigger the thermal protection switch. The thermal protection switch automatically resets itself as soon as motor temperature drops to the recommended operating level. This normally takes about 15 minutes.

MAINTENANCE

Cleaning upholstery

To keep the upholstery in good condition wipe the surface once a week with a cloth dampened with warm water. On areas of the upholstery in direct contact with the patient's skin, there may be sweat, grease or cosmetics stains that are difficult to remove using just water. In these cases a mild, non-abrasive alkaline (pH 7-10) household cleaning agent can be used.

Removing stains

All stains must be removed as soon as they appear.

Ordinary household and food stains:

Remove using a mild, nonabrasive alkaline (pH 7-10) household cleaning agent. Finally, wipe the surface with a cloth dampened with warm water.

Grease, oil, alkyd-paint, glue, tar and bitumen:

Remove using denatured alcohol, and then clean the surface with a mild, non-abrasive alkaline (pH 7-10) household cleaning agent. Finally, wipe the surface with a cloth dampened with warm water

Latex paint:

Remove using a cloth dampened with warm water.

Felt-tip pen (water soluble) stains and water-soluble glue:

Remove using warm water containing a small amount of ammonia, denatured alcohol or a 5% dilution of vinegar (acetic acid). Finally, wipe the surface with a cloth dampened with warm water

Do not use acetone, xylene, undiluted ammonia, concentrated acetic acid or strong solvents to clean the upholstery.

Permanent stains

Some materials and chemicals contain substances that can cause permanent staining. Such substances can be found in rubber, textile dyes, paints, etc. If items containing these substances are left in contact with the upholstery, they can permanently stain the surface of the upholstery. It is important, therefore, not to leave any rubber clothes, shoes with rubber soles or dyed textiles, particularly if they are wet, on the upholstery.

The chair body

The painted metal and plastic parts can be wiped clean with a mild soap-based cleaning agent. **DO NOT** use abrasive cleaning agents.

CAUTION

Only use authorized service technicians to carry out servicing operations.

To prevent accidents, do not allow children or persons unfamiliar with the chair to play with or use the chair.

Do not use the chair in rooms where there is a danger of an explosion.

When using an ultraviolet polymerization light, protect the upholstery from the light.

Do not put fingers in or place objects between the chair joints.

Do not place objects between the seat and the base.

Technical Specification for the Patient Chair	
Protection Class	I
Protection Grade	B
Protection Against Fluids	I PX0
Mode of Operation	Intermittent operation. Duty cycle for the unit is 60s/20s (use / not in use).
Operational Safety Grade	Standaard. The unit is not suitable for use in an environment with a mixture of inflammable anaesthesia, oxygen or laughing gas and air.
Operating Conditions Storage Conditions	Temperature: 15-40ºC Relative Humidity: 35-75% 0-50ºC 35-75%
Electrical Features	Supply: 230V / 50Hz Power consumption: 900W Main fuse: 5AT Main fuse (PCB): F2 / 125 mAT
Max. Unit Load Max. Unit Moment	70 kg 300 Nm
Max. Patient Weight	135 kg
Weight	FD-5000 / 119 kg FD-3600 / 119 kg